

appearances, as things or objects, are determinable in a possible experience. As to the empirical criterion of this necessary persistence and with it of the substantiality of appearances, however, what follows will give us the opportunity to note what is necessary.<sup>73</sup>

## B.

### Second Analogy.

<Principle of temporal sequence according to the law of causality.><sup>a,74</sup>

[In the first edition:]

Everything that happens (begins to be) presupposes something which it follows in accordance with a rule.

[In the second edition:]

<All alterations occur in accordance with the law of the connection of cause and effect.>

### Proof

<sup>b</sup>(That all appearances of the temporal sequence are collectively only alterations, i.e., a successive being and not-being of the determinations of the substance that persists there, consequently that the being of the substance itself, which succeeds its not-being, or its not-being, which succeeds its being, in other words, that the arising or perishing of the substance does not occur, the previous principle has shown. This could also have been expressed thus: **All change (succession) of appearances is only alteration**; for the arising or perishing of substance are not alterations of it, since the concept of alteration presupposes one and the same subject as existing with two opposed determinations, and thus as persisting. – After this preliminary reminder the proof follows.)

B 2 33

I perceive that appearances succeed one another, i.e., that a state of things exists at one time the opposite of which existed in the previous state. Thus I really connect two perceptions in time. **Now connection is not the work of mere sense and intuition, but is here rather the product of a synthetic faculty of the imagination, which determines inner sense with regard to temporal relations.** This, however, can combine the two states in question in two different ways, so that either one or the other precedes in time; for time cannot be perceived in itself, nor can what precedes and what follows in objects<sup>c</sup> be as it were empirically determined in relation<sup>d</sup> to it. I am therefore only conscious that my

<sup>a</sup> In the first edition: "Principle of Generation."

<sup>b</sup> The following two paragraphs were added in the second edition.

<sup>c</sup> *Objecte*

<sup>d</sup> *Beziehung*

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imagination places one state before and the other after, not that the one state precedes the other in the object;<sup>a</sup> or, in other words, through the mere perception the objective relation of the appearances that are succeeding one another remains undetermined. Now in order for this to be cognized as determined, the relation between the two states must be thought in such a way that it is thereby necessarily determined which of them must be placed before and which after rather than vice versa. The concept, however, that carries a necessity of synthetic unity with it can only be a pure concept of understanding, which does not lie in the perception, and that is here the concept of the relation of cause and effect, the former of which determines the latter in time, as its consequence,<sup>b</sup> and not as something that could merely precede in the imagination<sup>c</sup> (or not even be perceived at all). Therefore it is only because we subject the sequence of the appearances and thus all alteration to the law of causality that experience itself, i.e., empirical cognition of them, is possible; consequently they themselves, as objects of experience, are possible only in accordance with this law.>

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<sup>d</sup>The apprehension of the manifold of appearance is always successive. The representations of the parts succeed one another. Whether they also succeed in the object is a second point for reflection, which is not contained in the first. Now one can, to be sure, call everything, and even every representation, insofar as one is conscious of it, an object;<sup>e</sup> only what this word is to mean in the case of appearances, not insofar as they are (as representations) objects,<sup>f</sup> but rather only insofar as they designate an object,<sup>g</sup> requires a deeper investigation. Insofar as they are, merely as representations, at the same time objects of consciousness, they do not differ from their apprehension, i.e., from their being taken up into the synthesis of the imagination, and one must therefore say that the manifold of appearances is always successively generated in the mind. If appearances were things in themselves, then no human being would be able to assess from the succession of representations how the manifold is combined in the object.<sup>h</sup> For we have to do only with our representations; how things in themselves may be (without regard to

A 189

different meanings of 'object'

B 235

A 190

objects as representations

<sup>a</sup> Objecte

<sup>b</sup> Folge

<sup>c</sup> in der Einbildung

<sup>d</sup> Although the text common to the two editions resumes here, in his copy of the first edition Kant crossed out the next fourteen paragraphs, through A 201/B 246, suggesting that at one point he had contemplated an extensive revision of the second analogy that he did not in the end undertake (F, p. 34).

<sup>e</sup> Object

<sup>f</sup> Objecte

<sup>g</sup> Object

<sup>h</sup> Object

representations through which they affect us) is entirely beyond our cognitive sphere. Now although the appearances are not things in themselves, and nevertheless are the **only** thing that can be given to us for cognition, I still have to show what sort of combination in time pertains **to** the manifold in the appearances itself even though the representation of it in apprehension is always successive. Thus, e.g., the apprehension of the manifold in the appearance of a house that stands before me is successive. Now the question is whether the manifold of this house itself is also successive, which certainly **no** one will concede. Now, however, as soon as I raise my **concept** of an object to transcendental significance, the house is **not** a thing in itself at all but only an appearance, i.e., a representation, the transcendental object **of** which is unknown; therefore what **do** I understand by the question, how the manifold may be combined in the appearance itself (which is yet **nothing** in itself)? Here that which lies in the successive apprehension is considered as representation, but the appearance that is given to me, in spite **of** the fact that it is **nothing** more than a sum of these representations, is considered as their **object**, with which my **concept**, which I draw from the representations **of** apprehension, is **to** agree. One quickly sees that, since the agreement of cognition with the object<sup>a</sup> is truth, only the formal conditions of empirical truth can be inquired after here, and appearance, in contradistinction to the representations of apprehension, can thereby only be represented as the object<sup>b</sup> that is distinct from them if it stands under a rule that distinguishes it from every other apprehension, and makes one way of combining the manifold necessary. That in the appearance which contains the condition of this necessary rule of apprehension is the object.<sup>c</sup>

Now let us proceed to our problem. That something happens, i.e., that something or a state comes to be that previously was **not**, cannot be empirically perceived except where an appearance precedes that does not contain this state in itself; for a reality that would follow on an empty time, thus an arising not preceded by any state of things, can be apprehended just as little as empty time itself. Every apprehension of an **occurrence** is therefore a perception that **follows** another **one**. Since this is the case in all synthesis of apprehension, however, as I have shown above in the case **of** the appearance of a house, the **apprehension** of an occurrence is not yet thereby distinguished from any other. Yet I also note that, if in the case of an appearance that contains a happening I call the preceding state of perception *A* and the following one *B*, then *B* can only follow *A* in apprehension, but the perception *A* cannot fol-

<sup>a</sup> Object

<sup>b</sup> Object

<sup>c</sup> Object

Objective vs. subjective succession

House example

B 236

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the object 'in' appearance(s)

The argument

B 237

A 192

Irreversibility

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low but only precede *B*. E.g., I see a ship driven downstream. My perception of its position downstream follows the perception of its position upstream, and it is impossible that in the apprehension of this appearance the ship should first be perceived downstream and afterwards upstream. The order in the sequence of the perceptions in apprehension is therefore here determined, and the apprehension is bound to it. In the previous example of a house my perceptions could have begun at its rooftop and ended at the ground, but could also have begun below and ended above; likewise I could have apprehended the manifold of empirical intuition from the right or from the left. In the series of these perceptions there was therefore no determinate order that made it necessary when I had to begin in the apprehension in order to combine the manifold empirically. But this rule is always to be found in the perception of that which happens, and it makes the order of perceptions that follow one another (in the apprehension of this appearance) necessary.

the ship example

B 238

A 193

In our case I must therefore derive the subjective sequence of apprehension from the objective sequence of appearances, for otherwise the former would be entirely undetermined and no appearance would be distinguished from any other. The former alone proves nothing about the connection of the manifold in the object,<sup>a</sup> because it is entirely arbitrary. This connection must therefore consist in the order of the manifold of appearance in accordance with which the apprehension of one thing (that which happens) follows that of the other (which precedes) in accordance with a rule. Only thereby can I be justified in saying of the appearance itself, and not merely of my apprehension, that a sequence is to be encountered in it, which is to say as much as that I cannot arrange the apprehension otherwise than in exactly this sequence.

Deriving the subjective sequence from the objective

In accordance with such a rule there must therefore lie in that which in general precedes an occurrence the condition for a rule, in accordance with which this occurrence always and necessarily follows; conversely, however, I cannot go back from the occurrence and determine (through apprehension) what precedes. For no appearance goes back from the following point of time to the preceding one, but it is related merely to some preceding point or other; on the contrary, the progress from a given time to the determinately following one is necessary. Hence, since there is still something that follows, I must necessarily relate it to something else in general that precedes, and on which it follows in accordance with a rule, i.e., necessarily, so that the occurrence, as the conditioned, yields a secure indication of some condition, but it is the latter that determines the occurrence.

B 239

A 194

If one were to suppose that nothing preceded an occurrence that it must follow in accordance with a rule, then all sequence of perception

reductio argument

<sup>a</sup> Object

would be determined solely in apprehension, i.e., merely subjectively, but it would not thereby be objectively determined which of the perceptions must really be the preceding one and which the succeeding one. In this way we would have only a play of representations that would not be related to any object<sup>a</sup> at all, i.e., by means of our perception no appearance would be distinguished from any other as far as the temporal relation is concerned, since the succession in the apprehending is always the same, and there is therefore nothing in the appearance that determines it so that a certain sequence is thereby made necessary as objective. I would therefore not say that in appearance two states follow one another, but rather only that one apprehension follows the other, which is something merely subjective, and determines no object,<sup>b</sup> and thus cannot count as the cognition of any object (not even in the appearance).

If, therefore, we experience that something happens, then we always presuppose that something else precedes it, which it follows in accordance with a rule. For without this I would not say of the object<sup>c</sup> that it follows, since the mere sequence in my apprehension, if it is not, by means of a rule, determined in relation to something preceding, does not justify any sequence in the object.<sup>d</sup> Therefore I always make my subjective synthesis (of apprehension) objective with respect to a rule in accordance with which the appearances in their sequence, i.e., as they occur, are determined through the preceding state, and only under this presupposition alone is the experience of something that happens even possible.

To be sure, it seems as if this contradicts everything that has always been said about the course of the use of our understanding, according to which it is only through the perception and comparison of sequences of many occurrences on preceding appearances that we are led to discover a rule, in accordance with which certain occurrences always follow certain appearances, and are thereby first prompted to form the concept of cause. On such a footing this concept would be merely empirical, and the rule that it supplies, that everything that happens has a cause, would be just as contingent as the experience itself: its universality and necessity would then be merely feigned, and would have no true universal validity, since they would not be grounded *a priori* but only on induction. But the case is the same here as with other pure *a priori* representations (e.g., space and time) that we can extract as clear concepts from experience only because we have put them into experience, and

<sup>a</sup> Object

<sup>b</sup> Object

<sup>c</sup> Object

<sup>d</sup> Objecte

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experience is hence first brought about through them. Of course the logical clarity of this representation of a rule determining the series of occurrences, as that of a concept of cause, is only possible if we have made use of it in experience, but a consideration of it, as the condition of the synthetic unity of the appearances in time, was nevertheless the ground of experience itself, and therefore preceded it *a priori*.

It is therefore important to show by an example that even in experience we never ascribe sequence (of an occurrence, in which something happens that previously did not exist) to the object,<sup>a</sup> and distinguish it from the subjective sequence of our apprehension, except when a rule is the ground that necessitates us to observe this order of the perceptions rather than another, indeed that it is really this necessitation that first makes possible the representation of a succession in the object.<sup>b</sup>

B 242

A 197

We have representations in us, of which we can also become conscious. But let this consciousness reach as far and be as exact and precise as one wants, still there always remain only representations, i.e., inner determinations of our mind in this or that temporal relation. Now how do we come to posit an object<sup>c</sup> for these representations, or ascribe to their subjective reality, as modifications, some sort of objective reality? Objective significance cannot consist in the relation<sup>d</sup> to another representation (of that which one would call the object), for that would simply raise anew the question: How does this representation in turn go beyond itself and acquire objective significance in addition to the subjective significance that is proper to it as a determination of the state of mind? If we investigate what new characteristic is given to our representations by the relation<sup>e</sup> to an object, and what is the dignity that they thereby receive, we find that it does nothing beyond making the combination of representations necessary in a certain way, and subjecting them to a rule; and conversely that objective significance is conferred on our representations only insofar as a certain order in their temporal relation is necessary.

relating representations to an object

objective significance

B 243

In the synthesis of the appearances the manifold representations always follow one another. Now by this means no object<sup>f</sup> at all is represented; since through this sequence, which is common to all apprehensions, nothing is distinguished from anything else. But as soon as I perceive or anticipate that there is in this sequence a relation<sup>g</sup> to the

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<sup>a</sup> Object

<sup>b</sup> Object

<sup>c</sup> Object

<sup>d</sup> Beziehung

<sup>e</sup> Beziehung

<sup>f</sup> Object

<sup>g</sup> Beziehung

preceding state, from which the representation follows in accordance with a rule, I represent something as an occurrence, or as something that happens, i.e., I cognize an object that I must place in time in a determinate position, which, after the preceding state, cannot be otherwise assigned to it. Thus **if I perceive that something happens, then the first thing contained in this representation is that something precedes, for it is just in relation<sup>a</sup> to this that the appearance acquires its temporal relation, that, namely, of existing after a preceding time in which it did not.** But it can only acquire its determinate temporal position in this relation through something being presupposed in the preceding state on which it always follows, i.e., follows in accordance with a rule: from which it results, first, that I cannot reverse the series and place that which happens prior to that which it follows; and, second, that if the state that precedes is posited, then this determinate occurrence inevitably and necessarily follows. Thereby does it come about that there is an order among our representations, in which the present one (insofar as it has come to be) points to some preceding state as a correlate, to be sure still undetermined, of this event that is given, which is, however, determinately related to the latter, as its consequence, and necessarily connected with it in the temporal series.

B 244

A 199

Now if it is a necessary law of our sensibility, thus a **formal condition of all perceptions**, that the preceding time necessarily determines the following time (in that I cannot arrive at the following time except by passing through the preceding one), then it is also an indispensable law of the empirical representation of the temporal series that the appearances of the past time determine every existence in the following time, and that these, as occurrences, do not take place except insofar as the former determine their existence in time, i.e., establish it in accordance with a rule. **For only in the appearances can we empirically cognize this continuity in the connection<sup>b</sup> of times.**

Understanding belongs to all experience and its possibility, and the first thing that it does for this is not to make the representation of the objects distinct, but rather to make the representation of an object possible at all. Now this happens through its conferring temporal order on the appearances and their existence by assigning to each of these, as a consequence, a place in time determined *a priori* in regard to the preceding appearances, without which it would not agree with time itself, which determines the position of all its parts *a priori*. Now this determination of position cannot be borrowed from the relation of the appearances to absolute time (for that is not an object of perception), but, conversely, the appearances themselves must determine their positions

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A 200

<sup>a</sup> *Beziehung*

<sup>b</sup> *Zusammenhänge*

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in time for each other, and make this determination in the temporal order necessary, i.e., that which follows or happens must succeed that which was contained in the previous state in accordance with a general rule, from which arises a series of appearances, in which by means of the understanding the very same order and constant connection<sup>a</sup> in the series of possible perceptions is produced and made necessary as would be encountered *a priori* in the form of inner experience (time), in which all perceptions would have to have their place.

That something happens, therefore, is a perception that belongs to a possible experience, which becomes actual if I regard the position of the appearance as determined in time, thus if I regard it as an object<sup>b</sup> that can always be found in the connection<sup>c</sup> of perceptions in accordance with a rule. This rule for determining something with respect to its temporal sequence, however, is that in what precedes, the condition is to be encountered under which the occurrence always (i.e., necessarily) follows. Thus the principle of sufficient reason<sup>d</sup> is the ground of possible experience, namely the objective cognition of appearances with regard to their relation in the successive series<sup>e</sup> of time.

the principle of sufficient reason

B 246

A 201

The ground of proof of this proposition, however, rests solely on the following moments. To all empirical cognition there belongs the synthesis of the manifold through the imagination, which is always successive; i.e., the representations always follow each other in it. But the order of the sequence (what must precede and what must follow) is not determined in the imagination at all, and the series of successive<sup>f</sup> representations can be taken backwards just as well as forwards. But if this synthesis is a synthesis of apprehension (of the manifold of a given appearance), then the order in the object<sup>g</sup> is determined, or, to speak more precisely, there is therein an order of the successive synthesis that determines an object,<sup>h</sup> in accordance with which something would necessarily have to precede and, if this is posited, the other would necessarily have to follow. If, therefore, my perception is to contain the cognition of an occurrence, namely that something actually happens, then it must be an empirical judgment in which one thinks that the sequence is determined, i.e., that it presupposes another appearance in time which it follows necessarily or in accordance with a rule. Contrariwise, if I were to posit that which precedes and the occurrence did not follow it nec-

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<sup>a</sup> *Zusammenhang*

<sup>b</sup> *Object*

<sup>c</sup> *Zusammenhang*

<sup>d</sup> *der Satz von zureichenden Grunde*

<sup>e</sup> *Reihenfolge*

<sup>f</sup> Following Erdmann, reading *der einander folgender* instead of *der einen der folgenden*.

<sup>g</sup> *Object*

<sup>h</sup> *Object*

A 202 necessarily, then I would have to hold it to be only a subjective play of my imaginings, and if I still represented something objective by it I would have to call it a mere dream. Thus the relation of appearances (as possible perceptions) in accordance with which the existence of that which succeeds (what happens) is determined in time necessarily and in accordance with a rule by something that precedes it, consequently the relation of cause to effect, is the condition of the objective validity of our empirical judgments with regard to the series of perceptions, thus of their empirical truth, and therefore of experience. Hence the principle of the causal relation in the sequence of appearances is valid for all objects of experience (under the conditions of succession), since it is itself the ground of the possibility of such an experience.

succession vs  
simultaneity

Here, however, there is a reservation that must be raised. The principle of causal connection among appearances is, in our formula, limited to the succession<sup>a</sup> of them, although in the use of this principle it turns out that it also applies to their accompaniment,<sup>b</sup> and cause and effect can be simultaneous. E.g., there is warmth in a room that is not to be encountered in the outside air. I look around for the cause, and find a heated stove. Now this, as the cause, is simultaneous with its effect, the warmth of the chamber; thus here there is no succession<sup>c</sup> in time between cause and effect, rather they are simultaneous, yet the law still holds. The majority of efficient causes<sup>d</sup> in nature are simultaneous with their effects, and the temporal sequence of the latter is occasioned only by the fact that the cause cannot achieve its entire effect in one instant. But in the instant in which the effect first arises, it is always simultaneous with the causality of its cause, since if the cause had ceased to be an instant before then the effect would never have arisen. Here one must note that it is the order of time and not its lapse that is taken account of; the relation remains even if no time has elapsed. The time between the causality of the cause and its immediate effect can be vanishing (they can therefore be simultaneous), but the temporal relation of the one to the other still remains determinable.

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stove example

A 203

But in the instant in which the effect first arises, it is always simultaneous with the causality of its cause, since if the cause had ceased to be an instant before then the effect would never have arisen. Here one must note that it is the order of time and not its lapse that is taken account of; the relation remains even if no time has elapsed. The time between the causality of the cause and its immediate effect can be vanishing (they can therefore be simultaneous), but the temporal relation of the one to the other still remains determinable. If I consider a ball that lies on a stuffed pillow and makes a dent in it as a cause, it is simultaneous with its effect. Yet I still distinguish the two by means of the temporal relation of the dynamical connection. For if I lay the ball on the pillow the dent follows its previously smooth shape; but if (for whatever reason) the pillow has a dent, a leaden ball does not follow it.

ball & pillow example

B 249

The temporal sequence is accordingly the only empirical criterion of the effect in relation<sup>e</sup> to the causality of the cause that precedes it. The

<sup>a</sup> *Reihenfolge*

<sup>b</sup> *Begleitung*, here meaning simultaneous occurrence, as earlier at A 183/B 226.

<sup>c</sup> *Reihenfolge*

<sup>d</sup> Following the fourth edition, reading "*Ursachen*" instead of "*Ursache*."

<sup>e</sup> *Beziehung*

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glass is the cause of the rising of the water above its horizontal plane, though both appearances are simultaneous. For as soon as I draw the water into the glass from a larger vessel, something follows, namely the alteration of the horizontal state which the water had there into a concave state that it assumes in the glass.

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This causality leads to the concept of action, this to the concept of force, and thereby to the concept of substance.<sup>75</sup> Since I will not crowd my critical project, which concerns solely the sources of synthetic *a priori* cognition, with analyses that address merely the elucidation (not the amplification) of concepts, I leave the detailed discussion of these concepts to a future system of pure reason – especially since one can already find such an analysis in rich measure even in the familiar textbooks of this sort. Yet I cannot leave untouched the empirical criterion of a substance, insofar as it seems to manifest itself better and more readily through action than through the persistence of the appearance.

action, power,  
& substance

Where there is action, consequently activity and force, there is also substance, and in this alone must the seat of this fruitful source of appearances be sought. That is quite well said; but if one would explain what one understands by substance, and in so doing avoid a vicious circle, then the question is not so easily answered. How will one infer directly from the action to the persistence of that which acts, which is yet such an essential and singular characteristic of the substance (*phaenomenon*)? Yet given what we have already said, the solution of the question is not subject to such a difficulty, though after the usual fashion (proceeding merely analytically with its concepts) it would be entirely insoluble. Action already signifies the relation of the subject of causality to the effect. Now since all effect consists in that which happens, consequently in the changeable, which indicates succession in time, the ultimate subject of the changeable is therefore that which persists, as the substratum of everything that changes, i.e., the substance. For according to the principle of causality actions are always the primary ground of all change of appearances, and therefore cannot lie in a subject that itself changes, since otherwise further actions and another subject, which determines this change, would be required. Now on this account action, as a sufficient empirical criterion, proves substantiality without it being necessary for me first to seek out its persistence through compared perceptions, a way in which the completeness that is requisite for the quantity<sup>a</sup> and strict universality of the concept could not be attained. For that the primary subject of the causality of all arising and perishing cannot itself arise and perish (in the field of appearances) is a certain inference, which leads to empirical necessity and persistence in existence, consequently to the concept of a substance as appearance.

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A 205

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A 206

<sup>a</sup> Größe

If something happens, the mere arising, without regard to that which comes to be, is already in itself an object of investigation. It is already necessary to investigate the transition from the non-being of a state to this state, assuming that this state contained no quality in the appearance. This arising concerns, as was shown in section A,<sup>a</sup> not the substance (for that does not arise), but its state. It is therefore merely alteration, and not an origination out of nothing. If this origination is regarded as the effect of a foreign cause, then it is called creation, which cannot be admitted as an occurrence among the appearances, for its possibility alone would already undermine the unity of experience, though if I consider all things not as phenomena but rather as things in themselves and as objects of mere understanding, then, though they are substances, they can be regarded as dependent for their existence on a foreign cause; which, however, would introduce entirely new meanings for the words and would not apply to appearances as possible objects of experience.

B 252

A 207

Now how in general anything can be altered, how it is possible that upon a state in one point of time an opposite one could follow in the next – of these we have *a priori* not the least concept. For this acquaintance with actual forces is required, which can only be given empirically, e.g., acquaintance with moving forces, or, what comes to the same thing, with certain successive appearances (as motions) which indicate such forces. But the form of such an alteration, the condition under which alone it, as the arising of another state, can occur (whatever the content, i.e., the state, that is altered might be), consequently the succession of the states itself (that which has happened), can still be considered *a priori* according to the law of causality and the conditions of time.\*

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If a substance passes out of a state *a* into another state *b*, then the point in time of the latter is different from the point in time of the first state and follows it. Likewise the second state as a reality (in the appearance) is also distinguished from the first, in which it did not yet exist, as *b* is distinguished from zero; i.e., if the state *b* differs from the state *a* even only in magnitude, then the alteration would be an arising of *b-a*, which did not exist in the prior state, and with regard to which the latter = 0.

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\* Note well that I am not talking about the alteration of certain relations<sup>b</sup> in general, but rather of the alteration of the state. Hence if a body is moved uniformly, then it does not alter its state (of motion) at all, although it does if its motion increases or diminishes.

<sup>a</sup> That is, in the "First Analogy."

<sup>b</sup> *Relationen*

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The question therefore arises, how a thing passes from one state =  $a$  into another one =  $b$ . Between two instants there is always a time, and between two states in those instances there is always a difference that has a magnitude (for all parts of appearances are always in turn magnitudes). Thus every transition from one state into another happens in a time that is contained between two instants, of which the former determines the state from which the thing proceeds and the second the state at which it arrives. Both are therefore boundaries of the time of an alteration, consequently of the intermediate state between two states, and as such they belong to the whole alteration. Now every alteration has a cause, which manifests its causality in the entire time during which the alteration proceeds. Thus this cause does not produce its alteration suddenly (all at once or in an instant), but rather in a time, so that as the time increases from the initial instant  $a$  to its completion in  $b$ , the magnitude of the reality ( $b-a$ ) is also generated through all the smaller degrees that are contained between the first and the last. All alteration is therefore possible only through a continuous action of causality, which, insofar as it is uniform, is called a moment. The alteration does not consist of these moments, but it is generated through them as their effect.

B 254

A 209

That is, now, the law of the continuity of all alteration, the ground of which is this: That neither time nor appearance in time consists of smallest parts, and that nevertheless in its alteration the state of thing passes through all these parts, as elements, to its second state. No difference of the real in appearance is the smallest, just as no difference in the magnitude of times is, and thus the new state of reality grows out of the first, in which it did not exist, through all the infinite degrees of reality, the differences between which are all smaller than that between 0 and  $a$ .

What utility this proposition may have in research into nature does not concern us here. But how such a proposition, which seems to amplify our cognition of nature so much, is possible completely *a priori*, very much requires our scrutiny, even though it is obvious that it is real and correct, and one might therefore believe oneself to be relieved of the question how it is possible. For there are so many unfounded presumptions of the amplification of our cognition through pure reason that it must be adopted as a general principle to be distrustful of them all and not to believe and accept even the clearest dogmatic proof of this sort of proposition without documents that could provide a well-grounded deduction.

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A 210

All growth of empirical cognitions and every advance in perception is nothing but an amplification of the determination of inner sense, i.e., a progress in time, whatever the objects may be, either appearances or pure intuitions. This progress in time determines everything, and is not itself determined by anything further: i.e., its parts are only in time, and given through the synthesis of it, but they are not given before it. For

B 256 this reason every transition in perception to something that follows in time is a determination of time through the generation of this perception and, since that is always and in all its parts a magnitude, the generation of a perception as a magnitude through all degrees, of which none is the smallest, from zero to its determinate degree. It is from this that the possibility of cognizing *a priori* a law concerning the form of alterations becomes obvious. We anticipate only our own apprehension, the formal condition of which, since it is present in us prior to all given appearance, must surely be able to be cognized *a priori*.

A 2 I I In the same way, then, that time is the *a priori* sensible condition of the possibility of a continuous progress of that which exists to that which follows it, the understanding, by means of the unity of apperception, is the *a priori* condition of the possibility of a continuous determination of all positions for the appearances in this time, through the series of causes and effects, the former of which inevitably draw the existence of the latter after them and thereby make the empirical cognition of temporal relations (universally) valid for all time, thus objectively valid.

### C.

#### Third Analogy.

<Principle of simultaneity, according to the law of interaction, or community.><sup>a</sup>

[In the first edition:]

All substances, insofar as they are **simultaneous**, stand in thoroughgoing community (i.e., interaction with one another).

[In the second edition:]

<All substances, insofar as they can be perceived in space as simultaneous, are in thoroughgoing interaction.><sup>b</sup>

#### Proof

B 257 <sup>b</sup><Things are **simultaneous** if in empirical intuition the perception of one can follow the perception of the other **reciprocally** (which in the temporal sequence of appearances, as has been shown in the case of the second principle, cannot happen). Thus I can direct my perception first to the moon and subsequently to the earth, or, conversely, first to the earth and then subsequently to the moon, and on this account, since the perceptions of these objects can follow each other reciprocally, I say that they exist simultaneously. Now simultaneity is the existence of the manifold at the same time. But one cannot perceive time itself and thereby

<sup>a</sup> In the first edition: "Principle of community."

<sup>b</sup> This paragraph added in the second edition.